

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

IPA-007

In re Patent Application of:

Appellant : Akira NAKASHIMA et al.  
Title : COATING LIQUID FOR FORMING AMORPHOUS SILICA-  
BASED COATING FILM WITH LOW DIELECTRIC  
CONSTANT  
Serial No. : 10/533,302  
Filed : June 16, 2005  
Group Art Unit : 17593  
Examiner : MCDONOUGH, James E

APPELLANT'S REPLY BRIEF (37 CFR 1.192)

Date: December 28, 2009

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Further to the Examiner's Answer mailed on October 27, 2009 in connection with the above-identified application on appeal, herewith is Appellants' Reply Brief.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF REPLY BRIEF.

### ARGUMENT

In the Examiner's Answer, the Examiner has again indicated that Komatsu et al (Komatsu) does not explicitly teach the use of alkoxy silane, but does teach the use of chlorosilane. It is then asserted that, because Raman et al. (Raman) teaches organofunctional silanes such as chlorosilanes and that alkyl alkoxy silanes are functionally equivalent (column 7, lines 4-12) and further teaches that in an optimized process tetraethyl orthosilicate (TEOS) and methyltrimethoxysilane (MTMS) are used in combination, it would have been *prima facie* obvious to someone of ordinary skill in the art at the time the invention was made to modify the teachings of Komatsu, by substituting alkyl alkoxy silanes for the chlorosilanes, as "suggested" by Raman.

However, the reliance on Raman is submitted as being misplaced. The broad stroke indicating that Raman teaches organofunctional silanes such as chlorosilanes and that alkyl alkoxy silanes are functionally equivalent, is not seen as being tenable. The cited section of Raman is such as to disclose:

In accordance with yet another preferred embodiment of the process of this invention, the deposited films are subjected to surface derivatization. Surface derivatization refers to the monolayer-by-monolayer reduction of the pore size and/or alteration of the pore surface chemistry by reaction of reactive terminal sites existing on the surface of the pores with molecules, oligomers, or polymers. **Derivatization agents suitable for use in accordance with the process of this invention include, but are not limited to,** organofunctional silanes, such as

chlorosilanes ( $R'_x \text{SiCl}_{4-x}$ ) where  $R'$  is an alkyl ligand; alkyl alkoxysilanes ( $R'_x \text{Si(OR)}_{4-x}$ ), where  $R$  is an alkyl ligand and  $R'$  is a non-hydrolyzable ligand such as alkyl, fluoroalkyl, or amine; metal alkoxides,  $M(\text{OR})_n$ , where  $M$  is silicon, titanium or zirconium metal, and  $R$  is an alkyl ligand; alcohol amines, for example, triethanol amine; carboxylic acids, for example, acetic acid, and  $\beta$ -diketonates, for example, acetylacetonate. (Emphasis added)

Note is to be had to the expression "[D]erivatization agents suitable for use in accordance with the process of this invention . . . ." That is to say, the invention particularly disclosed in Raman.

There is, therefore, nothing to specifically suggest or teach that organofunctional silanes such as chlorosilanes and alkyl alkoxysilanes are functionally equivalent under all circumstances which clearly appear to be inferred. Further, the assertion that Raman actually suggests that any teachings of equivalence that may be perceived, could be transferred to those of the primary reference to Komatsu, is a stretch. Just because a "possible" equivalence is disclosed in the Raman arrangement, this does not mean that it would be "obvious" to arbitrarily select this particular material to replace another in the formulation of Komatsu.

Indeed, there are a number of possible materials listed in Raman - why focus on that which is mentioned in the claims. Why not select triethanol amine for example. This facet of the rejection appears to be nothing more than "its known so its obvious" type of hindsight aided cherry picking.

Further, this section of Raman discloses that R' is a non-hydrolyzable ligand. This would seem to at least partially interfere with the claimed requirement that TAOS and AS are hydrolyzed in the presence of purified TAAOH.

The rejection therefore fails to establish why one particular material of a listed selection is selected for the sake of rejection other than it is set forth in the claims.

The rejection then relies on the Senderov et al. and Taguchi et al. references. Indeed, the rejection acknowledges that Komatsu does not explicitly disclose the use of tetraalkyl ammonium hydroxide and turns to Senderov.

Senderov is used to indicate that an organic structure directing agent such as tetrapropyl ammonium hydroxide can be used. The rejection then admits that Senderov does not teach high purity tetrapropyl ammonium hydroxide and turns to Taguchi. Then, to make matters worse, the rejection admits that even though Taguchi is silent to the exact purity of the tetraalkyl ammonium hydroxide, it would be expected to at least overlap with the claimed range this is especially so "since applicants do not teach how they perform this purification process."

The fact that Taguchi is directed to a method of producing high grade tetraalkyl ammonium hydroxide has no bearing on the preceding issue. The fact that the applicants "do not teach how they perform this purification process", is not germane and totally without merit. Why would this be necessary? Would this not be a different invention entirely?

It is submitted that all of the strings and guidance which have been used to pull the various teachings together and reconstruct the claimed invention all originate in the same place - the applicants claims. Therefore, the previously submitted argument that the rejection improperly reconstructs the claimed subject matter is valid and at least one reason why this

rejection should be reversed. Indeed, the Examiner's position that the previously presented arguments are not persuasive because appellants have failed to articulate a reason for the combination being improper and appellants have failed to argue against the Examiners reasoning for combining the reference, is no longer valid.

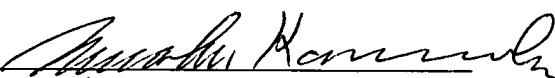
#### CONCLUSION

For the reasons advanced above and in Appellants' Appeal Brief, Appellants respectfully submit that claims 1-7, 10, and 29-38 are patentable at least due to the failure of the applied references to disclose, teach or motivate the person of ordinary skill in the related art to realize the claimed subject matter.

Accordingly, the rejection of claims 1-7, 10, and 29-38 is improper and reversal of the rejections is in order.

Respectfully submitted,

KANESAKA BERNER AND PARTNERS

By 

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